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very good – showing the powers of the Nux Vomica

An

Inaugural Essay

on

Paralysis or Palsy

for the

Degree of Doctor of Medicine

in the

University of Pennsylvania

by

Henry Myers

of

Virginia

Philadelphia January 2nd 1828

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# Paralysis or Palsy.

The term Palsy is an abbreviation of Paralysy or Paralysis, which is derived from the Greek verb παραλυω, signifying "to weaken". Palsy and Apoplexy were esteemed among the most ancient writers, as the same disease. Neither the word Paralysis or Palsy is to be found in the works of Hippocrates, but the Author evidently speaks of the affection under the head of Apoplexy; and (according to Dr. Cooke) Aretæus, Galen, Alexander Trallianus, Pliny, and Paulus Ægineta, describe the different kinds of Paralysis, as Apoplexy, and assert that they are one, and the same. The general opinion upon the subject now is, that they are in a measure the same, in as much as, each is frequently produced by the same causes, presenting similar symptoms, and exhibiting at times, like phenomena. Dr. Good tells us that though Palsy does resemble Apoplexy very nearly in all its symptoms, and general nature, and is often occasioned by it, yet, the former should be considered more strictly a nervous affection, and less connected with a morbid state of

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the sanguiferous, or respiratory organs; and that, tho' the nerves both of motion, and of sensation, may be equally affected, and some of the faculties of the mind may participate in that affection, yet the latter are never lost in the same degree, as they are in Apoplexy. This, then, is one great distinction between the two diseases: that, the intensity of action, and the extent of morbid influence, are much greater in Apoplexy, than in Palsy. Yet this is not the sole difference: for, tho' Apoplexy may, and, doubtless does often terminate in Paralysis, it is not by any means a necessary result; for it often exists without leading to any such effect, and Palsy may make its appearance, without any previous attack of Apoplexy. Again. tho' the diseases doubtless possess common symptoms, yet there are some belonging to peculiarly to each, that they can never be confounded.

Many and various have been the definitions given of Palsy; but they seem to have been framed rather for the support of some favorite theory, than as an

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accurate description of the disease. Some have defined it, "An impotence of motion"; others, "An incapacity of sense, or motion, when the person is awake", and a third, "a corporeal torpitude, and muscular immobility, more, or less general, without somnolency". Dr. Cooke, in his highly instructing, and excellent work on 'Nervous Diseases', in addition to these has enumerated many others, alike imperfect, and has offered one, which he considers "as comprehending all the chief characteristics of Palsy". He says, "It is a disease, in which there is a diminution, or total loss, of the power of voluntary motion, or of sensation, or of both, in some particular part, or parts, of the body, without Coma". Whether there is ever an entire loss of sensation is a point not precisely settled, but the weight of authority appears to be greatest on the side, that the power of sensation does exist in some degree in all cases, and is not at all impaired in many:- indeed the same author, shortly afterwards, observes that "Palsy chiefly consists in the loss of voluntary motion; for sensation in a greater or less degree

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generally remains, may, in certain cases, it is morbidly increased"; and then states, "I never saw a case of Palsy, in which sensation was entirely lost". On this point Dr. Good speaks very clearly, and nearly to the same amount. He says "the nerves chiefly affected, are those subservient to voluntary motion, but the accompanying nerves of feeling, in most cases, participate in the torpitude, tho' not in an equal degree". The appearance of presumption might deter me from attacking any opinion of Dr. Cooke's, were I not supported in so doing both by the opinions of that eminent gentleman himself, and of Dr. Good. For it is very evident that the statements of the former, (which follow his definition and which are quoted from him above) are results in direct opposition to that part of his definition, which says, "that palsy consists in a total loss of sensation". Were it not better to have said, "It is a disease in which there is a diminution or an entire loss of the power of voluntary motion, accompanied generally by a greater or less diminution of that of sensation without

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Coma? This alteration is humbly suggested, as it may perhaps lead to a more correct idea of the disease; if it is wrong, it is the result of a misconception and can do no injury to the reputation of that Author, whose genius, and whose experience have shed so much light upon the medical world. The humble follower in the path of science, has still left him but to imitate, for, while there are many subjects still involved in darkness, and in mistery, they have been so often assailed by the talent of Bracidency, yet that we are forced to turn from this investigation in despair, with the sad conviction, that he, who would shine in the present day, must be content to do so with a borrowed light. The question then recurs, how are we to account for the fact, that in Paralysis there may be a loss of motion, while the power of sensation remains entire and that sensation may be impaired, without any injury of the power of motion. Different theories have been advanced - The present explanation seems to be, that there are two sets of nerves, one for motion, the other for sensation - these are distinct in their origin, course and distribution,

distinct, but confined in the same sheath; and that on this account, the nerves of motion may be injured, without at all involving the nerve of sensation. Mr. C. Bell in his late work on the nervous system, gives an account of his experiments upon dogs, rabbits, and apes, in which he divided the nerves of motion, the consequence of which was, a loss of the power of motion in the part supplied by that nerve, while the power of sensation was in no way lessened; and, of those in which he divided the nerves of sensation, in which case, the power of sensation was lost, while that of motion was as perfect as ever. It would appear then that an injury done to one set of nerves does not necessarily produce a corresponding effect upon the other, which at once explains the apparent phenomenon. The same author, in a communication upon the subject to Mr. Cooke, concludes with the remark, "that I never, in a so different an effect as that of palsy on one side, and convulsion on the other side of the body, the subject has appeared to me so obscure, and difficult, that I have never ventured to grapple with the question." Yet this great physiologist

Whose acquaintance has never ventured to grapple with the question, but must wait with patience, until time and a longer experience shall dispel the obscurities of doubt which envelope it and so obscure it at present to know the facts as without being able to account for them. — Another matter of dispute among writers on this disease is, whether the convulsion of sleep is a sine qua non attendant upon an attack of it, but this is now generally conceived to be an, and should be considered as one of the characteristics of the affection.

Paralysis is divided into three distinct species, according to the manner in which it attacks and affects, such species. When one half of the Body is affected longitudinally, thus it is say, when one side of the Face, and the arm, leg, &c. of that side is the seat of the disease, it is denominated "Hemiplegia"; when the Body is attacked transversely, it receives the name of "Paraplegia", and when only certain muscles, or a particular limb becomes paralytic, it is called "Paralysis partialis" — The first is met with more frequently than either of the other two and in the general cases.

Causes, is the effect of Apoplexy: while many instances occur, in which it cannot be traced to any such disease. Some Authors assert, whose opinions are esteemed highly, that by a strict attention, and a nice examination, some of the appearances of Apoplexy will, in the greater number of Cases, be found to succede an attack of Hemiplegia.

'Paraplegia' is said, most generally, to be owing to some disease of, or injury done to, the Spine. It may almost always be ascribed to this Cause, when the lower half of the Body is affected, & this, in the opinions of most writers on the subject, is oftener the seat of the disease, than the upper part of the Body. Some of the Causes of Hemiplegia, and Consequently of Apoplexy, are also enumerated among those of this form of the disease. When it arises from injury, or disease of the Spine, it is said to make its attack suddenly, and in the other Case, its appearance is reported to be slow and its approach insidious.

'Paralysis Facialis' may be the effect of the general Causes of the other varieties, being, it is thought, owing to these Causes acting in a slighter degree, or, not being sufficiently powerful to

to produce one of the other forms. Partial palsy may be the precursor of hemiplegia or paraplegia, and its tendency being prevented, it may be made a cure in this limited extent, thus rendering it ascertainable to one of these diseases, or to the causes producing these affections. But local palsy has its own peculiar causes independent of either of the other forms. There are tumours pressing upon the nerves, exposure of a particular part of the body to a current of cold, damp air, and also exposure to the fumes of certain metallic substances, especially of lead and Mercury. Workers in these articles are said to be peculiarly liable to the disease, and instances are related of persons having been attacked from sleeping in a newly painted room in which white lead had been employed, and others, where they have been seized with it from sleeping in a room where lead was frequently melted; while cases are not wanting to prove the fact that the Mercurial preparations are equally instrumental. Fatigue of certain muscles is also enumerated among the other causes, and likewise irritation of the intestines.

Causes of General Palsy. The predisposing causes of

this disease are the same as those of Apoplexy, so much as the latter affection generally precedes the former. These are generally advanced age, debilitated Constitution, and certain peculiar states of the system. Although the disease most frequently makes its attack upon persons advanced in years, yet children are by no means exempt. They may be hereditarily disposed to it, or they may possess those habits of body, which are found to favor and facilitate the existence of this malady; such as a large head, short neck, corpulency, &c. A sedentary mode of life especially when accompanied by habits of intemperance in eating or drinking; the cessation of certain accustomed discharges as a suppression of the menses, or of a copious hæmorrhoidal flux, or the healing of long standing ulcers &c.

The Chief Exciting Causes are extremes of Heat and Cold, an exposure to the rays of the sun, too frequent use of the warm bath, drinking hot diluent liquors immoderately &c. The passions of the mind as grief, fear, and anger, frequently induce the disease. There are also exciting causes of

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of Apoplexy, but here Palsy draws a line of distinction between itself and that disease; for although the above are causes common to both yet if they do not act in a sufficient degree to excite apoplexy, the consequence may be Palsy – Much dispute has arisen as to the influence of compression in this disease – The advocates for it, say, that it is always owing to compression, others that it never is – The former adduce many experiments to substantiate their opinion; among these is M. Portal – Dr. Cooke has enumerated many of this gentleman's experiments, in which pressure, if sufficiently strong, and long continued, did bring about the result; whilst M. Serres, who denies the theory of pressure says, that his experiments confirmed him in his opinion – How are these contradictory statements to be reconciled? the error into which these gentlemen seem to have fallen is that neither from declares pressure to be always the cause, and the other that it never is – The fact then appears to be, that Apoplexy, and Palsy may very often be ascribed to this cause, and that, in many instances they cannot be traced to it –

The Diagnosis and Prognosis, are said to be easy – the

history; this disease when compared with Apoplexy, which it most resembles, will enable us to establish the first, and render it so manifest that there is little fear of mistaking this for any other affection. If the distortion is lessened, a greater freedom of motion established, the action of the Bowels regular, and especially a sense of returning warmth experienced, the Prognosis is favorable. But if the disease has been of long standing, the limbs much wasted, and debility considerable, a cure is deemed nearly hopeless.

Treatment. This is divided by authors into that which is applicable to Hemiplegia, that to Paraplegia, and that to Local Palsy. The general treatment of the disease may be summed up in a few words. The limits of a thesis will not allow me to enter into that appertaining to the different varieties, which at best would necessarily be a compilation, my experience being too slight to warrant my suggesting any thing new; but I will, presently, with the permission of those before whom this paper has to appear, state a case of Hemiplegia which fell under the treatment of my Preceptor Doctor John Cullen

of

of Richmond, an attending Physician of the Infirmary of that place, and the progress of which I had the honor, and satisfaction of witnessing with him. The general Treatment of Paley divides itself into that which is proper as a preventive, and that which is suitable when the disease has made its appearance. It has also been stated, that certain habits of the body predispose to the disease, such as a large chest & short neck &c. Under these circumstances, we cannot remove the predisposing cause, so that our remedies must consist of those articles which will operate as palliatives. These are light diet, abstinence from all liquors which tend to heat the system, and increase arterial action, moderate exercise so as to induce perspiration without fatigue, which by the body would become overheated, and too great an action of the lungs induced, the consequence of which might be an accelerated flow of Blood to the head. The Bowels should be kept open by mild Laxatives, and Dr. Cooke recommends, in cases where there is a natural tendency to apoplexy, Blisters, Setons, or issues, in the neighbourhood of the head, so as to keep up a constant discharge. When the disease has made its appearance

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attended by apoplectic symptoms, venesection must be resorted to — this of course is to be regulated by circumstances, as the age of the Patient, his general Constitution, strength &c. But when it is contra-indicated the Lancet must be used boldly — the quantity of blood drawn should be large, and repeatedly taken — Purgatives are next to be employed, until the Bowels have been freely evacuated — Emetics next claim our attention, but these are to be given with considerable caution — The stomach when thrown into violent action tends greatly to increase the flow of blood to the head, and whilst any such disposition in the system remains, emetics should be avoided if possible, or, if there be an accumulation of foul matter in the stomach, they should be postponed, until that predisposition is removed —

Diaphoretics & cathartics and revulsives have all had their advocates, but in the present day are seldom, or never employed — When the disease is of long standing, and a tendency to apoplexy has disappeared, or, in other words, when it exists only as Palsy, independent of its primary causes and

symptoms.

symptoms stimulants become highly useful. These are applied externally, and internally. Of the former, friction, blisters, sinapisms, fomentations, the warm and cold bath, electricity, and galvanism, have all had their share of patronage. Electricity, particularly, has been found beneficial. The European writers, and especially the French, speak very highly of it. Many cases are recorded of its efficacy, upon authority which must ever command respect. The mode of applying it is by means of the wooden point, by which it is administered silently, and moderately, and the ill consequences by some said to result from a shock or spark, avoided. This remedy however has failed in many instances, and its effects, though beneficial at first, being evanescent, it has of late years been laid aside. The same may be said of galvanism, which we are recommended to apply moderately at first, and to increase the number of plates, and consequently the force, gradually. The actual cautery, and moxa have both been employed, and are much contended for by some practitioners.

The principal external stimulants are, the Rhus

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Toxicodendron, or Poison Oak, the Strychnos Nux Vomica, the Stone Radish, and the Mustard Seed. The leaves of the Poison Oak are used, given at first in the dose of half a grain repeated twice, or three times a day, the day; it is then gradually increased to three, four, five, and six grains per diem. The Nux Vomica resembles the Poison Oak in its effects; but possesses this advantage, that we are able to administer it in larger doses, without the fear of doing an injury to the patient. This remedy was employed in the case alluded to above, an account of which I shall now give.

"Ebes Hughes, aged forty two, belonging to the City Guard, was attacked, on the night of — November, 1826, while on guard, with vertigo, loss of muscular power and speech, (his accounting to his own account, retaining) perfect consciousness. In about fifteen, or twenty minutes, he recovered a partial use of his speech, and the entire muscular power of the right side, this being a total paralysis of the left, attended with a sensation of great coldness, and a difficulty of micturating. Several days previous to the attack, he had complained of occasional

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vertigo, which was ascribed to his intemperate habits. He was admitted into the Infirmary at Richmond in April 182[illegible], and was first seen by Dr. John Cullen in the first of June following. From what could be learnt of his previous treatment, nothing more than slightly stimulating frictions had been employed, which were productive of little, or no benefit. The left side still paralytic with the deviation of Bell: the patient complaining of occasional shooting pains in the extremities, and difficulty of passing his urine; his face distorted, and drawn to the right side - pulse small, regular, and at about sixty beats; tongue clean and the functions of the digestive Canal well performed.

He was ordered, Sub: Mur: Hydr: grs xij

Pulv: Jalap: - xxv, which operated well, and the day following the treatment with Nux Vomica commenced - Two pills, each containing grs iv, were given him during the day, which quantity was continued four days without any visible effect - Three pills were now ordered, each containing grs iv, when at the expiration of three days the number was increased to four pills, ter in diem - The day following his taking

taking, this additional quantity the patient reported that the leg of the affected side, had been drawn forcibly upwards and forwards, and the arm, of the same side, backwards; and that there was a sense of heat experienced over the entire paralytic portion. The continuance of the four pills being attended with no additional effect, at the expiration of four days, another pill was added to the number, which served only to keep up the cumulative movements. Twenty four grains were now ordered, when so remarkable an increase of the effect took place that the patient was hurried up several times when in the act of morning. This dose was continued a few days, when pending the [illegible] subsiding, twenty eight grains of Jalap were administered. The effect of this quantity made its appearance early at night, when the patient unannounced by heavy, as he reported, so forcibly drawn from his bed, that he thought some one was actually carrying him. The remedy was now laid aside for a time, an active Cathartic prescribed, and the skin irritated in its whole course with Tartar Emetic Ointment. The healthy side, during all this period was

was not affected by the remedy, nor did it excite any disturbance of the head, stomach, or intestines, its action being confined to the paralytic side exclusively; which had been so far benefited, as to enable the patient to walk with tolerable facility, by the aid of the manual exercise, indicating the partial restoration of muscular power to the arm, and the distortion of the face was considerably diminished. The treatment was suspended for some days, during which time, he was ordered to take moderate exercise, when, on the 12th of July, the Nux Vomica was resumed, in the dose of twenty four grains daily, which on the 14th was increased to thirty two grains. This reproduced the convulsive movements, amounting in a short time to nervous tremors, on which account the remedy was again laid aside. His general health is now good, the powers of motion in a great measure restored, no difficulty of micturating, and an equality of heat over the whole surface established, while the distortion of the face is scarcely perceptible.

Many cases similar to this, have been recently attended with like results, from the use of the Strychnos Nux Vomica.

Arnica, and every one that is now added to the list will serve to strengthen our confidence in it. The use of this medicine is said to have been attended with toxic symptoms, sometimes most intolerable, however, from its abuse; but until it is shown that it takes place in a disproportionate number of cases, we are warranted in employing it.

The root of the horse radish, and the seeds of the Sinapis, or Mustard are given in substance, infusion and decoction, in large doses; and are pronounced to be efficacious. The whole Catalogue of Stimulants has been exhausted by different Authors. The Cantharides, and Volatile Alkali however, deserve particular attention, and we should certainly place great confidence in the latter, when we find it acting so powerfully, and so beneficially in the greater number of diseases, which require the use of this class of remedies. When a cure has been perfected, the patient should be cautioned never to expose himself to a cold damp atmosphere, to avoid all strong liquors, and to be very careful in his diet. The Flannel roller, or flan

and worn next the skin has been found by some of our most eminent practitioners a great preservative against cold, and should be used by such patients.

I have thus endeavoured to give the History, Causes &c. of Palsy; not however with the slightest hope that I could suggest anything new or instructive. But in the long list of diseases "that flesh is heir to", none is better calculated to command the attention of the Physician, or excite the sympathy of the philanthropist, than the one just under consideration. — for it is one, whose ravages are not confined to the Body, but often extend to the Mind; one, not causing immediate death it's force, but which dooms the sufferer to a life of mental, and corporeal inactivity, and one, certainly, which, when completely under our control, will aid greatly to the many comfortable reflections of the Practitioner, and entitle him to the appellation of the Benefactor of Mankind.